UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/581,231	06/02/2006	Zhangzhen Jiang	CU-4813 WWP	1368

26530 7590 06/12/2008
LADAS & PARRY LLP
224 SOUTH MICHIGAN AVENUE
SUITE 1600
CHICAGO, IL 60604

EXAMINER	
VU, HOANG-CHUONG Q	

ART UNIT	PAPER NUMBER
2619	

MAIL DATE	DELIVERY MODE
06/12/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/581,231	JIANG ET AL.	
	Examiner	Art Unit	
	HOANG-CHUONG Q. VU	2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *07/10/2006 & 03/05/2007 & 06/03/2008*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The Applicants' claim priority based upon PCT/CN04/01379 filed on November 30, 2004 and China Patent Application 200320127259.X filed December 05, 2003, receipt is acknowledged and submitted papers have been placed of record in the file. New claims 11-18 were added through preliminary amendment filed June 02, 2006, thus claims 1-18 are pending and have been examined on the merit.

Claim Objections

2. **Claims 6,13-16** are objected to because of the following informalities:

In claims 6, 13-16, please replace "the cross module" with ---a cross module---- and "the SDH equipment node" with --- a SDH equipment node---.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. **Claims 6, 15, 16** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 6, 15, and 16, recite the limitation "the corresponding line modules". It has no antecedent basis.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. **Claims 1, 2, 4, and 11** are rejected under 35 U.S.C. 102(e) as being anticipated by Sethuram et al. (6,765,928).

Regarding claim 1, Sethuram et al. disclose a synchronous digital hierarchy communication supporting multiple service processing, including a Synchronous Digital Hierarchy (SDH) tributary processing unit **(see Fig. 8; SONET/SDH engine)** and service processing units; wherein there are at least two service processing units **(see Fig. 6E; services receive and transmit byte engines for services of various data types)** connected with the SDH tributary processing unit respectively, for mapping and unmapping corresponding service signals **(see col. 17 line 65 thru col. 18 line 16 and Fig. 8; Each type of services are mapped into STS frames for transmission)**; the SDH tributary processing unit is for multiplexing and demultiplexing multiple service signals in an SDH signal **(see col. 5 lines 51-55; the SDH transmit byte engine multiplexes service data received from multiple services for transmission into the SDH communication system as a SONET/SDH frame. Also see col. 17 lines 28-35)**.

Regarding claim 2, Sethuram et al. further teach a synchronous digital hierarchy communication supporting multiple service processing wherein each of the service processing units is connected directly to a corresponding local interface respectively **(see col. 4 lines 16-20)**.

Regarding claim 4, Sethuram et al. teach all subject matter of the claimed invention as recited in claim 1 above and further teach a synchronous digital hierarchy communication supporting multiple service processing wherein the SDH tributary processing unit separates out the service signals corresponding to different service processing units, according to different time slots corresponding to the SDH signals of different services **(see col. 6 lines 52-58)**.

Regarding claim 11, Sethuram et al. teach all subject matter of the claimed invention as recited in claim 2 above and further teach a synchronous digital hierarchy communication supporting multiple service processing wherein the SDH tributary processing unit separates out the service signals corresponding to different service processing units, according to different time slots corresponding to the SDH signals of different services **(see col. 6 lines 52-58)**.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. **Claims 3, 5-10, and 12-18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sethuram et al. (6,765,928) in view of Shimbashi et al. (6,798,779).

Regarding claim 3, Sethuram et al. disclose all the subject matter of the claimed invention as recited in claim 2 above with the exception of the synchronous digital hierarchy tributary module supporting multiple service processing, wherein the tributary module further includes a multiple service cross processing unit which is used to implement interconnection among different services, each service processing unit being connected to a local interface through the multiple service cross processing unit. However, Shimbashi et al. from the same or similar field of endeavor teach a synchronous digital hierarchy communication supporting multiple service processing wherein the tributary module further includes a multiple service cross processing unit which is used to implement interconnection among different services **(see Fig. 4 and col. 6 lines 22-27; STS switching module receives a signal from one of the interfaces 22-1 thru 22-3 and crossconnect the signal at an STS-1 level)**, each service processing unit being connected to a local interface through the multiple service cross processing unit **(see Fig. 5)**. Therefore, it would have been obvious to one of

ordinary skill in the art at the time of the invention to such the system of Shimbashi et al. in the system taught by Sethuram et al. One of ordinary skill in the art would have motivated to use the STS switching module of Shimbashi et al. to process and switch multiple services signal.

Regarding claim 5, Shimbashi et al. further teach a synchronous digital hierarchy communication, wherein a cross module of a SDH equipment node time-division multiplexes multiple service SDH signals into one SDH signal **(see Fig. 8; VT signals are arranged to time slots by crossconnect or switching)**.

Regarding claim 6, Sethuram et al. further disclose a synchronous digital hierarchy communication supporting multiple service processing, wherein the services to be sent from the local to the SDH side are mapped by the service processing units respectively **(see col. 17 line 65 thru col. 18 line 16 and Fig. 8; Each type of services are mapped into STS frames for transmission)** and sent to the SDH tributary processing unit for multiplexing **(see col. 5 lines 51-55; the SDH transmit byte engine multiplexes service data received from multiple services for transmission into the SDH communication system as a SONET/SDH frame. Also see col. 17 lines 28-35)**, different services being multiplexed in different time slots **(see col. 6 lines 52-58)**. Shimbashi et al. further teach the cross module of the SDH equipment node transmits the signals of different time slots to the corresponding line modules or other tributary modules **(see Fig. 8; VT signals are arranged to time slots by crossconnect or switching. See Fig. 15, signals are transmitted to interface modules IF)**.

Regarding claim 7, Sethuram et al. disclose a synchronous digital hierarchy communication supporting multiple service processing, including a plurality of local interfaces **(see col. 16 line 66 thru col. 17 line 2; services engine interfaces and processes M streams of variable data types)**, wherein the SDH tributary module comprises an SDH tributary processing unit **(see Fig. 8; SONET/SDH engine)** and at least two service processing units **(see Fig. 6E; services receive and transmit byte engines for services of various data types)** connected with the SDH tributary processing unit respectively, the service processing unit being for mapping and unmapping corresponding service signal **(see col. 17 line 65 thru col. 18 line 16 and Fig. 8; Each type of services are mapped into STS frames for transmission)**, and the SDH tributary processing unit being for multiplexing and demultiplexing multiple service signals in an SDH signal **(see col. 5 lines 51-55; the SDH transmit byte engine multiplexes service data received from multiple services for transmission into the SDH communication system as a SONET/SDH frame. Also see col. 17 lines 28-35)**, each of the service processing units being directly connected with a corresponding local interface respectively **(see Fig. 8 and col. 17 line 65 thru col. 18 line 1)**. But, Sethuram et al. fail to disclose a plurality of line modules, a cross module connected with the line modules respectively and a plurality of SDH tributary modules connected with the cross module respectively. However, Shimbashi et al. from the same or similar field of endeavor teach a plurality of line modules **(see Fig. 15, interface modules IF 152-1 thru 152-m)**, a cross module connected with the line modules respectively **(see Fig. 15, IF modules connected to crossconnecting units)** and a

plurality of SDH tributary modules connected with the cross module respectively **(see Fig. 15, STS mux and dmux)**. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the system of Shimbashi et al. in the system taught by Sethuram et al. One of ordinary skill in the art would have motivated to cross module, IF modules taught by Shimbashi et al. to perform STS crossconnect operation. The motivation for doing so is to accommodate various type of services and to handle various data information in an STM format **(see Shimbashi et al. col. 1 lines 14-45).**

Regarding claim 8, Sethuram et al. further teach a synchronous digital hierarchy communication supporting multiple service processing wherein the SDH tributary processing unit separates out the service signals corresponding to different service processing units, according to different time slots corresponding to the SDH signals of different services **(see col. 6 lines 52-58)**.

Regarding claim 9, Shimbashi et al. further teach a synchronous digital hierarchy communication, wherein a cross module of a SDH equipment node time-division multiplexes multiple service SDH signals into one SDH signal **(see Fig. 8; VT signals are arranged to time slots by crossconnect or switching)**.

Regarding claim 10, Sethuram et al. further disclose a synchronous digital hierarchy communication supporting multiple service processing, wherein the services to be sent from the local to the SDH side are mapped by the service processing units respectively **(see col. 17 line 65 thru col. 18 line 16 and Fig. 8; Each type of services are mapped into STS frames for transmission)** and sent to the SDH tributary processing unit for multiplexing **(see col. 5 lines 51-55; the SDH transmit**

byte engine multiplexes service data received from multiple services for transmission into the SDH communication system as a SONET/SDH frame. Also see col. 17 lines 28-35), different services being multiplexed in different time slots **(see col. 6 lines 52-58)**. Shimbashi et al. further teach the cross module of the SDH equipment node transmits the signals of different time slots to the corresponding line modules or other tributary modules **(see Fig. 8; VT signals are arranged to time slots by crossconnect or switching. See Fig. 15, signals are transmitted to interface modules IF)**.

Regarding claim 12, Sethuram et al. teach all subject matter of the claimed invention as recited in claim 3 above and further teach a synchronous digital hierarchy communication supporting multiple service processing wherein the SDH tributary processing unit separates out the service signals corresponding to different service processing units, according to different time slots corresponding to the SDH signals of different services **(see col. 6 lines 52-58)**.

Regarding claim 13, Shimbashi et al. further teach a synchronous digital hierarchy communication, wherein a cross module of a SDH equipment node time-division multiplexes multiple service SDH signals into one SDH signal **(see Fig. 8; VT signals are arranged to time slots by crossconnect or switching)**.

Regarding claim 14, Shimbashi et al. further teach a synchronous digital hierarchy communication, wherein a cross module of a SDH equipment node time-division multiplexes multiple service SDH signals into one SDH signal **(see Fig. 8; VT signals are arranged to time slots by crossconnect or switching)**.

Regarding claim 15, Sethuram et al. further disclose a synchronous digital hierarchy communication supporting multiple service processing, wherein the services to be sent from the local to the SDH side are mapped by the service processing units respectively **(see col. 17 line 65 thru col. 18 line 16 and Fig. 8; Each type of services are mapped into STS frames for transmission)** and sent to the SDH tributary processing unit for multiplexing **(see col. 5 lines 51-55; the SDH transmit byte engine multiplexes service data received from multiple services for transmission into the SDH communication system as a SONET/SDH frame. Also see col. 17 lines 28-35)**, different services being multiplexed in different time slots **(see col. 6 lines 52-58)**. Shimbashi et al. further teach the cross module of the SDH equipment node transmits the signals of different time slots to the corresponding line modules or other tributary modules **(see Fig. 8; VT signals are arranged to time slots by crossconnect or switching. See Fig. 15, signals are transmitted to interface modules IF)**.

Regarding claim 16, Sethuram et al. further disclose a synchronous digital hierarchy communication supporting multiple service processing, wherein the services to be sent from the local to the SDH side are mapped by the service processing units respectively **(see col. 17 line 65 thru col. 18 line 16 and Fig. 8; Each type of services are mapped into STS frames for transmission)** and sent to the SDH tributary processing unit for multiplexing **(see col. 5 lines 51-55; the SDH transmit byte engine multiplexes service data received from multiple services for transmission into the SDH communication system as a SONET/SDH frame. Also**

see col. 17 lines 28-35), different services being multiplexed in different time slots **(see col. 6 lines 52-58)**. Shimbashi et al. further teach the cross module of the SDH equipment node transmits the signals of different time slots to the corresponding line modules or other tributary modules **(see Fig. 8; VT signals are arranged to time slots by crossconnect or switching. See Fig. 15, signals are transmitted to interface modules IF)**.

Regarding claim 17, Sethuram et al. further disclose a synchronous digital hierarchy communication supporting multiple service processing, wherein the services to be sent from the local to the SDH side are mapped by the service processing units respectively **(see col. 17 line 65 thru col. 18 line 16 and Fig. 8; Each type of services are mapped into STS frames for transmission)** and sent to the SDH tributary processing unit for multiplexing **(see col. 5 lines 51-55; the SDH transmit byte engine multiplexes service data received from multiple services for transmission into the SDH communication system as a SONET/SDH frame. Also see col. 17 lines 28-35)**, different services being multiplexed in different time slots **(see col. 6 lines 52-58)**. Shimbashi et al. further teach the cross module of the SDH equipment node transmits the signals of different time slots to the corresponding line modules or other tributary modules **(see Fig. 8; VT signals are arranged to time slots by crossconnect or switching. See Fig. 15, signals are transmitted to interface modules IF)**.

Regarding claim 18, Sethuram et al. further disclose a synchronous digital hierarchy communication supporting multiple service processing, wherein the services

to be sent from the local to the SDH side are mapped by the service processing units respectively **(see col. 17 line 65 thru col. 18 line 16 and Fig. 8; Each type of services are mapped into STS frames for transmission)** and sent to the SDH tributary processing unit for multiplexing **(see col. 5 lines 51-55; the SDH transmit byte engine multiplexes service data received from multiple services for transmission into the SDH communication system as a SONET/SDH frame. Also see col. 17 lines 28-35)**, different services being multiplexed in different time slots **(see col. 6 lines 52-58)**. Shimbashi et al. further teach the cross module of the SDH equipment node transmits the signals of different time slots to the corresponding line modules or other tributary modules **(see Fig. 8; VT signals are arranged to time slots by crossconnect or switching. See Fig. 15, signals are transmitted to interface modules IF)**.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOANG-CHUONG Q. VU whose telephone number is (571) 270-3945. The examiner can normally be reached on Monday through Thursday 8:30 AM to 5:00 PM EST. and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, EDAN ORGAD can be reached on (571) 272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/H.V./ June 6, 2008

/Edan Orgad/
Supervisory Patent Examiner, Art Unit 2619